



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/590,270	08/22/2006	Nobuhiko Hojo	043888-0480	6069
53080 7590 07/07/2009 MCDERMOTT WILL & EMERY LLP 600 13TH STREET, NW WASHINGTON, DC 20005-3096				
EXAMINER				
RHEE, JANE J				
ART UNIT		PAPER NUMBER		
1795				
MAIL DATE		DELIVERY MODE		
07/07/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/590,270

Applicant(s)

HOJO ET AL.

Examiner

JANE RHEE

Art Unit

1795

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 14-31 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 14-31 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF/08)
Paper No(s)/Mail Date 3/26/09.8/22/06
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 14-23,25-28,30-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Fleischer et al. (US20020127474).

As to claim 14, Fleischer discloses a proton conductor comprising a base material (paragraph 0221-0223), an acidic substance and a basic substance, wherein the acidic substance has protons; at least part of the protons are dissociated by the basic substance (paragraph 0229-0230,0049); at least one of the acidic substance and the basic substance is immobilized on a surface of the base material; and the base material has no electron conductivity (paragraph 0221-0223).

As to claim 15, Fleischer discloses wherein at least part of the at least one of the acidic substance and the basic substance is a polymer, and the base material is retained in a matrix of the polymer (paragraph 0221-0222,0229-0230,0049).

As to claim 16, Fleischer discloses a proton conductor comprising a particulate base material (paragraph 0222) having an acidic substance immobilized on a surface thereof, and a particulate base material having a basic substance immobilized on a surface thereof, wherein the acidic substance has protons; and at least part of the protons are dissociated by the basic substance (paragraph 0229-0230,0049).

As to claim 17, Fleischer discloses proton conductor comprising a base material, an acidic substance and a basic substance, wherein the acidic substance has protons; at least part of the protons are dissociated by the basic substance; and the base material is a porous body having pores or through-holes (paragraph 0221), and one of the acidic substance and the basic substance is immobilized on an inner wall of the pores or the through-holes of the porous body to form a first layer, and the other of the acidic substance and the basic substance is immobilized on the first layer by acid-base bond to form a second layer (paragraph 0224).

As to claim 18, Fleischer discloses, wherein the at least one of the acidic substance and the basic substance is an organic compound having a hydrophilic part and a hydrophobic part in the molecule (abstract).

As to claim 19, Fleischer discloses wherein the organic compound forms a built-up film in the pores or through-holes (paragraph 0221).

As to claim 20, Fleischer discloses further comprising a non-electron conductive substance, wherein the non-electron conductive substance clogs at least part of the pores (paragraph 0221).

As to claim 21, Fleischer discloses wherein the porous body has at least the through-holes (paragraph 0222).

As to claim 22, Fleischer discloses wherein the base material is composed of an inorganic substance (paragraph 0222).

As to claim 23, Fleischer discloses an electrolyte membrane comprising the proton conductor (paragraph 0082).

As to claim 25, Fleischer discloses a fuel cell comprising an anode, a cathode and an electrolyte membrane interposed therebetween (paragraph 0082).

As to claim 26, Fleischer discloses fuel cell comprising an anode, a cathode and an electrolyte membrane interposed therebetween (paragraph 0082).

As to claim 27, Fleischer discloses wherein the base material is composed of an inorganic substance (paragraph 0222).

As to claim 28, Fleischer discloses an electrolyte membrane comprising the proton conductor (paragraph 0082).

As to claim 30, Fleischer discloses a fuel cell comprising an anode, a cathode and an electrolyte membrane interposed therebetween (paragraph 0082).

As to claim 31, Fleischer discloses a fuel cell comprising an anode, a cathode and an electrolyte membrane interposed therebetween (paragraph 0082).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 24,29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fleischer in view of Kreuer et al. (6264857).

Fleischer discloses the proton conductor described above. Fleischer fail to disclose an electrode comprising the proton conductor. Kreuer et al. teaches using the

proton conductor on membranes films or electrodes for providing the electrochemical cell with thermal stability suitable for use both at high and low temperatures due to their good chemical and physical stability and high proton conductivity (col. 4 lines 40-41,66-col. 5 lines 1-5).

Therefore, it would have been obvious to one having ordinary skill in the art at the time applicant's invention was made to provide, an electrode comprising the proton conductor in order to provide the electrochemical cell with thermal stability suitable for use both at high and low temperatures due to their good chemical and physical stability and high proton conductivity (col. 4 lines 40-41,66-col. 5 lines 1-5) as taught by Kreuer et al.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JANE RHEE whose telephone number is (571)272-1499. The examiner can normally be reached on M-F 9-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jane Rhee/
Primary Examiner, Art Unit 1795